Non-invasive method for determining, in vivo, the rate of oxygen saturation of arterial blood and device for carrying out this method.

Publication number: EP0524083 (A1)
Publication date: 1993-01-20
Inventor(s): BARTHELEMY JEAN CLAUDE [FR]; GEYSSANT ANDRE [FR]
Applicant(s): EFFETS BIOLOGIQUES EXERCICE [FR]
Classification:
- **international:** ***A61B5/145; A61B5/00; A61B5/1455;*** **A61B5/145; A61B5/00;** (IPC1-7): A61B5/00
- **European:** A61B5/00N4
Application number: EP19920402032 19920715
Priority number(s): FR19910009020 19910717

Also published as:
EP0524083 (B1)
JP5228129 (A)
FR2679337 (A1)
DE69208760 (T2)
CA2074029 (A1)
more >>

Cited documents:
EP0390664 (A1)
US4714341 (A)
WO8201948 (A1)
WO9004941 (A1)
EP0426358 (A1)

Abstract of **EP 0524083** (A1)

The device comprises three laser diodes (11, 12, 13) emitting at 660, 750 and 940 nm respectively and cyclically excited at the rate of a clock (17). The light emitted is channelled by three optical fibres, (14, 15, 16) in order to pass through a well-vascularised tissue region (1) of a subject over three substantially merged optical paths, and to end up on an optoelectronic sensor (10) which delivers interlaced signals representing the molecular absorption. The pulsation of the arterial blood in the region (1) induces variable components which are a function solely of the molecular absorptions due to oxyhaemoglobin, deoxyhaemoglobin and carboxyhaemoglobin.; The signals are directed by gates (21, 22, 23) onto three channels where the variable components are extracted and digitised, which components are then processed in the microprocessor (30) in order to give the oxygen saturation (SaO2) and the fixation of carbon monoxide on the haemoglobin.